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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/067,812	02/08/2002	Yasukazu Iwasaki	040356-0424	8928
22428	7590	08/19/2005	EXAMINER	
FOLEY AND LARDNER SUITE 500 3000 K STREET NW WASHINGTON, DC 20007			MERCADO, JULIAN A	
			ART UNIT	PAPER NUMBER
			1745	

DATE MAILED: 08/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/067,812

Applicant(s)

IWASAKI ET AL.

Examiner

Julian Mercado

Art Unit

1745

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 July 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 9-11 and 13 is/are rejected.
- 7) ☒ Claim(s) 7, 8 and 12 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Remarks

This Office action is responsive to applicant's after-Final communication filed July 28, 2005.

Claims 1-13 are pending.

This Office action presents a new ground of rejection and is therefore made NON-FINAL.

Claim Rejections - 35 USC § 102 and 103

The rejection of claims 1 and 10-12 under 35 U.S.C. 102(b) based on Baker (U.S. Pat. 4,365,006) has been withdrawn.

The examiner concedes with applicant's assertion that "vapor" is a gaseous state of substance. (remarks on page 4, per Webster's II New College Dictionary as provided) Additionally, U.S. Patent 4,588,659 to Abens et al. is cited to teach a vaporizer (such as similarly used by Baker) which converts "liquid fuel and water to a vaporized or gaseous state..." (col. 3 line 1 et seq.)

The rejection of claims 2-4 and 9 under 35 U.S.C. 103(a) based on Baker in view of Okamoto (U.S. Pat. 6,045,933), and the rejection of claim 13 under 35 U.S.C. 103(a) based on Baker in view of Hsu (U.S. Pat. 5,747,185) have each been withdrawn.

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The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1, 3-6, 10 and 11 rejected under 35 U.S.C. 102(b) as being anticipated by Abens et al. (U.S. Pat. 4,585,708).

Abens et al. teaches a fuel cell system with a vaporizer [3], i.e. reformer in the circulation passage, with an injector mechanism [2] injecting liquid fuel, “[t]he reformer 3... converts the fuel-water mixture to fuel process gas.” (col. 2 line 52 et seq.) Thus, the vaporizer in this context vaporizes the injected fuel. The exhaust circulation passage includes both the anode and cathode exhaust. (col. 2 line 62-66) A water feeder [6] is upstream of the injector mechanism. (col. 2 line 68 et seq.) Therefore, the water feeder is considered installed on the vaporizer to the extent that the water is ultimately delivered thereto.

Claims 2 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Abens et al. in view of Okamoto (U.S. Pat. 6,045,933)

The teachings of Abens et al. are discussed above.

For the reasons already of record, Okamoto is relied upon to teach a circulation blower [62] downstream of a vaporizer [54]. (col. 3 line 34-38) The skilled artisan would find obvious to employ a circulation blower for reasons such as ensuring the return passage of the exhaust gas. (ib.)

Additionally, Okamoto further teaches art-recognition of a solid oxide fuel cell to other fuel cell types. (col. 1 line 16-25) A solid oxide fuel cell would be an obvious substitution in recognition of its high-powered applications.

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Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Abens et al. as in view of Hsu (U.S. Pat. 5,747,185)

The teachings of Abens et al. are discussed above.

For the reasons already of record, Hsu teaches internal reformation in a fuel cell as an improvement over an external reforming type. (compare Figure 1 and Figure 5) The skilled artisan would find obvious to employ internal reforming for reasons such as compacting of the fuel cell and conservation of energy that would otherwise be expended in external reformation.

Allowable Subject Matter

Claims 7, 8 and 12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 7 and 8 are maintained allowable for the reasons set forth in the June 30, 2004 Office action.

Claim 12 would be allowable if rewritten in independent form as the present ground of rejection relies on the reformer in Akens et al. as being structurally and functionally readable on the claimed vaporizer. Thus, the reformer in Abens et al. is readable on either a vaporizer (as required by claim 1), or, a reformer (as required by claim 12). The examiner concedes that there is no basis for duplication, so as to employ a second reformer, in Abens et al.

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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julian Mercado whose telephone number is (571) 272-1289. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Ryan, can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.



MARK RUTHKOSKY
PRIMARY EXAMINER

[Handwritten signature] 9/15/05